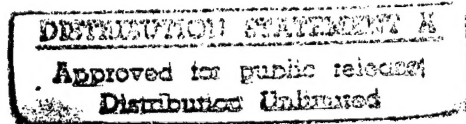


Nuclear Strategy, Deterrence, Compellence, and Risk(y?) Management:

Thomas Schelling Meets Joint Vision 2010

A paper prepared for the 65th
Military Operations Research Symposium
Marine Corps Combat Development Command
Quantico, VA 10-12 June, 1997



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19970618 082

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)

2. REPORT DATE

06 JUN 97

3. REPORT TYPE AND DATES COVERED

4. TITLE AND SUBTITLE

Nuclear strategy, Deterrence, Compellence,
and Risk Management: Thomas Schelling
Meets Joint Vision 2010

5. FUNDING NUMBERS

6. AUTHOR(S)

ROBERT R. TOMES

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

ANSEL
ARLINGTON, VA

8. PERFORMING ORGANIZATION
REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING
AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

PUBLIC RELEASE

12b. DISTRIBUTION CODE

~~A~~ A

13. ABSTRACT (Maximum 200 words)

14. SUBJECT TERMS

MORS

15. NUMBER OF PAGES

31

16. PRICE CODE

17. SECURITY CLASSIFICATION
OF REPORT

UNCLASSIFIED

18. SECURITY CLASSIFICATION
OF THIS PAGE

UNCLASSIFIED

19. SECURITY CLASSIFICATION OF
ABSTRACT

UNCLASSIFIED

20. LIMITATION OF ABSTRACT

UNCLASSIFIED/UNLIMITED

CLASSIFIED BY:

DECLASSIFIED ON:

The Value of Defense Technical Information Center (DTIC)

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I. Schelling and 2010: Analyzing the Epistemology of Nuclear Strategy and Deterrence Theory

Introduction: Why Schelling?

Thomas Schelling's The Strategy of Conflict (1960) and Arms and Influence (1966) are two "classics" of deterrence theory. The former, a path-breaking analysis of strategic interaction, codified Schelling's theoretical framework and gave birth to a new style of conflict analysis. The latter further developed theory, rendered it more readable by decreasing a tendency toward formalism, and elaborated it with countless historical examples that continue to inform theory-building. Schelling's presentation of the concepts and issues related to -- and embedded within -- the "paradox" underscoring nuclear deterrence as a political-military strategy has maintained currency for almost a fourth of a century. His work provides a conceptual framework applicable to policy analysis, the examination of contingency operations, and the formulation of strategy-to-task mission guidance. Phil Williams provides a cogent summary of Schelling's influence on deterrence theory:

The contribution made by Thomas Schelling to nuclear strategy was both immense and unique. Schelling brought to the subject a subtlety and sophistication which were rarely equaled let alone surpassed by other strategists. His work had a rare combination of rigor and imagination, and the contribution that he made to the understanding of deterrence, coercion and arms control was highly distinctive and of major importance...[I]t is impossible to deny the richness of his insights or the significance of his contribution.¹

In a review of the history of nuclear strategy, Martin van Creveld posits that Schelling is "the greatest of all post-1945 strategists" and uses chapter titles from Arms and Influence as analogues to the core elements of strategic thought during the nuclear era, "which consisted of 'the diplomacy of violence,' the 'art of commitment,' 'the manipulation of risk,' and 'the dialogue of competitive armament.'"² Von Creveld's admiration for Schelling's unique analysis of deterrence and conflict management is common among scholars despite what is perceived as a casual approach to the use of overwhelming force when employing "hurting power" to invigorate diplomacy. For example, his comments on the role of massive bombing to "hurt" the leadership of N. Vietnam and influence peace negotiations have been widely criticized for promoting a "bomb first ask questions later" strategy. His comments, however, were theoretical in nature and not written as direct policy prescriptions. Despite what some perceive to be a proclivity for violence, few other deterrence theorists provide the scope and depth Schelling brings to the analysis and application of deterrence theory. There is also much more to Schelling than his idea of "hurting power."

Post-Cold War military strategy continues to rely on the concepts and ideas of classical deterrence theory. The original precepts of deterrence theory were conceived within a Cold War international context that no longer exists: they must be re-examined and adapted to the post-Cold War threat environment. Rather than trying to overlay dated precepts onto a new operational environment, planners need to square the concepts of classical deterrence theory with the requirements of post-Cold War security affairs. To accomplish this process, the concepts and theoretical frameworks elaborated during the Cold War must be analyzed and attuned to recent changes in international security affairs. Modernizing the underlying assumptions of deterrence and constructing a robust deterrence strategy will require a thorough examination of deterrence as a planning strategy

¹William's chapter in Schelling in Baylis, John, and Garnett, John, Makers of Nuclear Strategy (New York: St. Martin's Press, 1991), p 120.

²Nuclear Proliferation and the Future of Conflict (New York: The Free Press, 1993), p. 60 and fn. 83 p.139.

Why Schelling Meets 2010?

The image evoked by the title, "Thomas Schelling Meets Joint Vision 2010," parallels the historical evolution of national security strategy. Currently, we can suggest the "bookends" of post-World War II nuclear strategy, both of which are associated with their own Revolution in Military Affairs (RMA). In the late 1950s, Soviet military theorists argued that the combination of nuclear weapons with increasingly sophisticated delivery means had engendered a nuclear RMA; the assumptions underscoring this earlier RMA dominated Soviet military theory at the time Schelling published his first book -- the same year that Khrushchev announced a new military doctrine for the Soviet Union that neglected conventional force development and focused on nuclear weapons. Thirty years later, when analyzing the performance of the US military during the Gulf War, Soviet Chief of Staff Ogarkov and others posited that technologically advanced, highly-precise conventional weapons would soon replicate the effects of small nuclear weapons on the battlefield: a turn of events described as a Military-Technical Revolution and a new RMA. It was in this atmosphere, one that reified technological advances, and one in which many have come to view technology as imputing a revolution in the history of warfare, that 2010 was published and became the US military's guide to the next century.

Enormous changes in global politics over the last decade led to a shift in military requirements planning away from world war to regional contingencies. Responding to global changes and preparing for the next century requires new national strategies and doctrinal road maps. National security analysts will have to re-examine the founding precepts of deterrence theory, how they gave rise to US nuclear strategy, and their enduring influence on how we *think* about international security. This re-examination will likely lead to a reevaluation of the core concepts that have been taken from classical deterrence theory, the same core ideas that have already been used to formulate strategies to aid a transition to a post-Cold War threat environment. Schelling's concepts and ideas, some of which were integrated into US strategy during the Cold War, are applicable to analysis of the current operational environment but need to be adapted along with doctrine and strategy. In some cases, arguably, the wrong tenets have been carried over and misapplied to the new era while other tenets have been ignored altogether. Essentially, Schelling's framework remains relevant; the application of his ideas need to be updated and made more robust.

This paper holds that the current situation is ripe for an application of the tenets of Schellingsque deterrence theory as a framework for both nuclear and conventional deterrence strategy. Schelling's work remains highly conducive to theory-building primarily because it is rich in concepts, historical cases, and lengthy discussions of timeless assumptions *underlying* conflict behavior. In some respects Schelling's work may be similar to that of Clausewitz: his work provides concepts and theoretical insight that can be reinterpreted over time and exploited as a tool to guide theory-building. Schelling and other classical deterrence theorists will not provide ready-made answers to the pressing strategic and operational problems on the current and emerging threat landscape. Revisiting the founding works of deterrence theory will endow contemporary analyses of deterrence with a deeper understanding of how deterrence evolved as a "mantra" of national security and how *the preponderance of all military planning* during the Cold War became mere extensions of nuclear deterrence. Tracing the evolution of deterrence as an organizing principle in security planning will enlighten how we organize and reorganize for the future. Among others, this paper argues, Schelling's works on deterrence theory can be used to facilitate ~~us with~~ "Analysis for Complex, Uncertain Times."

The "Mantra" of Deterrence As An Organizing Principle

There seems to be a tendency in American security planning to assume that deterrence will continue to function in the same way that it did fifteen years ago, a tendency that is nothing less than a recipe for disaster when deterrence fails. Deterrence did not keep Saddam Hussein out of Kuwait, although a good case can be made that US deterrence threats were not specifically attuned to this objective. After the August invasion, however, the US was unable to compel Iraq to leave Kuwait and had to forcefully remove Iraqi forces. A mantra, in figurative terms, is a continuous refrain, a repeated phrase or sentence, a reoccurring thought running throughout a dialogue. During and after the Cold War, deterrence has the quality of a mantra. Throughout his psychoanalytic sessions with patients, Freud reportedly whispered

"unconscious...unconscious...unconscious" to suggest to the patient on both the conscious and unconscious levels that the responses and feelings he was looking for should emanate from the unconscious realm. National security dialogue, arguably, has been subjected to the repeated whispers, even loud proclamation, that deterrence is the ultimate source of security. Alexander George and others have deconstructed the entire discussion of deterrence by creating a new field of "coercive diplomacy," which is similar to Schelling's idea of compellence but is only concerned with defensive behavior. This paper does not integrate the arguments of the coercive diplomacy school because they seem to be refinements of Schelling's deterrence-compellence dichotomy. And this dichotomy, not coercive diplomacy, is more reflective of the "mantra" of US national security planning.

In one of the best books on deterrence after the Cold War, Keith Payne has compiled a number of statements on deterrence made by US national security decision makers. Payne's analysis is not specifically attuned to the use of deterrence in regional conflicts but is as close to a comprehensive analysis of deterrence in the evolving operational environment as any published in the last year. The following statements, quoted by Payne, are reflective of the mantra of deterrence:³

Jan Lodai, Principal Deputy Undersecretary of Defense for Policy, claimed in July 1995 that "nuclear deterrence worked throughout the Cold War, it continues to work now, it will work into the future...The exact same kinds of nuclear deterrence calculations that have always worked will continue to work."

Dick Cheney's 1993 *Annual Report of the Secretary of Defense to the President and the Congress* asserts confidently that a "strong U.S. nuclear force provides a secure retaliatory capability that serves to deter the use of weapons of mass destruction while providing unambiguous warning to potential aggressors who have acquired these capabilities or are in the process of acquiring them."

John Pike of the Federation of American Scientists [posited]: "I am assuming that deterrence will work with these [rogue] countries as it worked with Joseph Stalin and Chairman Mao: 'We'll turn you into a sea of radioactive glass 20 minutes later.'"

Spurgeon Keeny, executive director of the Arms Control Association, when commenting on the future deterrence of regional rogue states, expressed extreme confidence in deterrence policies and his own understanding of deterrence by claiming to know that "even fanatical, paranoid regimes are deterred by the prospect of catastrophic consequences."

Jonathan Dean, advisor to the Union of Concerned Scientists, claims with unfettered certainty that, "Deterrence is not just a theory. It is validated by evidence from real life, including the forty years of mutual Cold War nuclear standoff between the United States and the Soviet Union. Nor does it apply only to large, nuclear armed states...Deterrence will remain a reliable defense against possible rogue missile attack in the United States [because] they know their regimes would be wiped out if they actually launched a missile attack on the United States."

Congressman Norm Dicks, of the House's Defense Appropriations Subcommittee, when asked about limited WMD threats to the United States responded rhetorically, "Someone would launch a single nuclear weapon at the United States? That would be the end of their country."

As Payne argues,

³ Keith B. Payne, *Deterrence in the Second Nuclear Age* (Lexington: The University Press of Kentucky, 1996), chap. 3.

These expressions by senior U.S. officials and commentators about deterrence theory and practice are common. They reflect a widely held view that we can answer the question of how to deter over a broad range of prospective opponents with a confidence born from decades of successfully deterring the Soviet Union...A generation of defense officials and intellectuals has simply persuaded itself that it 'knows deterrence' with a very high degree of certainty and that deterrence stability can be manipulated with predictable reliability...Assuming that deterrence will 'work' because the opponent will behave sensibly is bound to be the basis for a future surprise.

The "mantra" of deterrence, it seems, has continued in the post-Cold War thoughts and visions of senior national security decision-makers. As former Secretary of Defense Perry noted, "the reality is that the simple threat of retaliation may not be enough to deter some rogue nations or to deter terrorists from using these weapons. Thus we cannot always rely on deterrence."⁴ The question Payne is asking, "how to deter" in the evolving security environment, may not be the first question we should answer. Instead, we should be asking how we know what we know about deterrence as an organizing principle of national security.

Joint Vision 2010 and the Image of Deterrence: Toward the Analytical Lens

Despite the evolution of nuclear strategy into what will be discussed below as a "nonstrategy," the arguments and insight Schelling injected into *Cold War* discussions of nuclear operations can enlighten *post-Cold War* analyses of conventional and strategic nuclear operations that are designed to deter or to compel. *Joint Vision 2010* (hereafter *2010*), mirrors previous US military strategies that were founded on the "risk management" concepts outlined by Schelling and other first-generation deterrence theorists. According to *2010*, "America's strategic nuclear deterrent, along with appropriate national level detection and defensive capabilities, will likely remain *at the core* of American national security" (p. 4; emphasis added). *2010*'s fundamental vision, perhaps its primary objective, is to enable US forces to dominate an expanding "spectrum of conflict" by extending the precepts of Cold War deterrence theory -- and its illusory deterrence "umbrella" -- to block aggression before it escalates into war, regional upheaval, and destabilizing spillover effects such as forced migration and capital flight.

In the evolving operational environment it seems unlikely that, as currently applied, classical nuclear deterrence theory (or neoclassical variants such as enhanced, extended, immediate, general) will guide military planning for "full spectrum dominance" as easily as it provided a rationale for nuclear coercion during the Cold War. Recent discussions of "flexible deterrent operations" [or "options"] (FDOs) recall an earlier era when flexible response and graduated deterrence attempted to operationalize a brand of coercive diplomacy that did not depend solely upon mass nuclear strikes. While FDOs are important additions to the post-Cold War operational toolbox, they will be ineffective unless configured to the requirements of each deterrence relationship.

The efficacy of post-Cold War strategic operations -- especially those planned around precise "deep attack" weapons that involve high-tech conventional strikes on over-the-horizon targets -- cannot be assumed to possess a deterrent effect on contemporary rogue states in the same manner or fashion as did nuclear weapons on Russia during the Cold War. This does not mean that regional deterrence regimes will be unsuccessful, only that they should not be elaborated in the image of a Cold War, bipolar deterrence regime that was based on a significantly different system structure; instead, they must be delicately constructed to account for local variations in perception and incentive structures. In this paper, the lens through which post-Cold War deterrence theory is analyzed will be focused on the epistemological aspects of deterrence theory.

Epistemology and Robustness in Military Operations Research

⁴ Ibid.

Epistemology, the study or theory of knowledge, seeks to answer the question, "How do we know what we know?" In disciplines such as Operations Research, where empiricism and quantitative methods are highly valued, similar analyses focusing primarily on epistemological issues are rare. However, the theoretical assumptions underlying OR and similar disciplines are quantitative cousins to the philosophical work of the early epistemologists writing in the late eighteenth and early nineteenth centuries. Formal reasoning, logic proofs, and even probability models are attempts to illuminate our understanding of how we construct and assign value to beliefs and perception, how we understand causation, and why we learn. The robustness of the epistemology of military operations research is as important to successful modeling and methods as are other aspects of model-building and analysis. This paper does not claim to be a comprehensive analysis of the epistemological underpinnings of deterrence theory. Rather, it uses Schelling's analytical concepts to initiate discussion of the veracity, robustness, and assumptions of post-Cold War deterrence theory.

Epistemology is a branch of philosophy that studies the origins, structure, methods and validity of knowledge. Most histories of epistemology attribute the term to J.F. Ferrier's *Institutes of Metaphysics*, which was published in the middle of nineteenth century. Ferrier argued that philosophy could be divided into two branches, epistemology and ontology. Later works linked epistemology to metaphysics, logic, and psychology -- all fields in which deterrence theory bases its assumptions upon. Of these, the logic of formal reasoning is the only branch of epistemology normally found in contemporary discussions of deterrence as a national military strategy. However, more recent works on the methods of epistemology have tended to separate the study of formal principles of reasoning into a separate field of logic, while epistemology is considered more the realm of the philosophy of science and the study of "truth." This paper is less concerned with principles of reasoning than with the study of "truth" in the form of coming to grips with how and why we consider some precepts of deterrence to be "true" and others false. Epistemology has retained its emphasis on the psychology of knowledge, which is a better theoretical fit with deterrence theory because it is in the realm of psychology that deterrence either succeeds or fails. Moreover, deterrence is composed of perception, cognition, memory, learning, imagination and other psycho-social factors that lend themselves to epistemological analysis.

This paper does criticize *2010*'s vision (or lack thereof) because it seems too focused on technology and too eager to uphold deterrence as the core of post-Cold War international security without providing an explanation as to how deterrence will be attuned to regional conflict. To its credit, *2010* does combine deterrence with other military strategies in order to cast a wide net. However, there has been little in the way of declared deterrence strategy that addresses changes in the structure of international security affairs. The following critique of nuclear strategy and deterrence theory should not be mistaken for an argument paralleling that of John Mueller or other revisionists who suggest that nuclear weapons were or are irrelevant in international politics. Opposing Mueller, it links a review of the strategy of nuclear deterrence with an analysis of the role nuclear weapons played in past, present and future global politico-military affairs.

A critical tone should not be taken as a total condemnation of *2010*. As we shall see, the efficacy of applying classical deterrence theory in regional contexts may be in decline while the use of compellence in international relations may become more necessary, a process that *2010* does not address. A later section of the paper addresses the issue of "risk(y)" management: is the continued reliance on classical deterrence theory a continuation of "risk management," as deterrence theory was termed in the Cold War, or, has the degradation of deterrence engendered a situation of "risky" management toward post-Cold War strategic planning?

Scope and Outline

After sketching the role of nuclear weapons and deterrence in international relations, this paper exploits the conceptual framework Schelling elaborated in *Arms and Influence* -- which retains its utility as

a guide to the threat of the use of force as bargaining power: to facilitate an analysis of the role of deterrence in a 2010 world; to examine the role of strategic nuclear forces in the evolving operational environment; and to argue that US military planners must distance themselves, and operational planning, from the "safety" of relying on the tenets of classical deterrence theory when confronting post-Cold War crises. It is true that a focus on strategic operations, a situation mandated by the need to focus on the working group's issue-area, truncates the discussion of post-Cold War deterrence theory by separating strategic operations from other areas when, in reality, they are inseparable. Limiting the analysis to a narrow area of US military operations, however, does not limit the utility of a serious analysis of strategic operations: such an analysis is of critical import at a time when US military strategy is struggling to adapt to global politico-military upheaval.

Although Schelling encompasses the core of the following discussion of classical deterrence theory, works of other deterrence theorists such as Kahn, Brodie, Wholsetter, and Kissinger inform the analysis. The purpose is not a comprehensive survey of deterrence literature. Instead, it focuses on the theory and concepts of deterrence that currently provide the assumptions underscoring current strategy and policy. In addition to analyzing deterrence theory's concepts and underlying assumptions, the paper seeks to stimulate discussion of the epistemology of post-Cold War deterrence strategy. Arguably, challenging the epistemology of defense-related issues should be a primary focus of anyone grappling with those changes that are or should be occurring in US national security policy and doctrine. Subsumed within the "challenging of defense epistemology" are questions related to the ability to realize the much-touted Revolution in Military Affairs, the primacy of an evolving US strategic culture, the effect of the Gulf War on American politico-military relations, and the relationship between the media and foreign policy decision making. In the context of Operations Research (OR), challenging the epistemology of defense is nothing less than challenging the assumptions and ontology of the models, simulations, and other constructs employed to *deconstruct reality* as a first step in the "*shaping of reality*." The last section of the paper presents a limited number of Schelling's concepts in order to stimulate thinking about post-Cold War deterrence.

II. What Legacy from a Non-Strategy? Establishing the Role of Nuclear Weapons in Global Politics

Introduction

In addition to profound changes in the structure of international relations, the end of the Cold War has wrought fundamental changes in the way we think about international security. Still, the dominance of nuclear thinking continues unabated. A theme running throughout the paper is a call to explore the legacy of a nuclear strategy that evolved into what Edward Luttwak (1987) and others termed a "nonstrategy." Exploration is warranted not because nuclear weapons have lost their utility as a deterrent but because post-Cold War security requirements may have shifted away from deterrence toward what Schelling termed "compellence" -- a state of affairs that can not be addressed solely with nuclear coercion. It may be that epistemological problems with the formulation of post-Cold War strategic operations stem from decades of accepting the illogic of nuclear warfare. Indeed, what will be discussed below as the "splintering" of military strategy shattered whatever cohesion existed in the realm of pre-nuclear age military theory. Now, with the emphasis on nuclear weapons in decline, there is a need to raise the level of effort devoted to theoretical analysis of currently held assumptions of classical deterrence theory -- only such analyses will produce a cumulative gain in US operational art.

One path toward this analysis is to return to the military theory of the early decades of the bipolar nuclear era. Surprisingly, many of these works of military theory contain arguments that parallel the argument for more robust theory in the analysis of emerging concepts in strategic operations. For example, Henry Eccles observed in 1965 that, "[i]n the military and its associated political, industrial, and scientific people, the lack of an accepted body of military theory and principle leaves a void in the basic philosophy that should guide people in distinguishing between cause and effect, between the trivial and the important, between the central and the peripheral." Analysis of post-Cold War strategic operations cannot hope to distinguish between such aspects as "cause and effect" relations in the evolving phenomena of warfare without first coming to grips with the stagnation of US military theory and the effect this has on our

conceptual approach (or organizational reaction) to new ideas. The importance of a cause-effect analysis in deterrence is often overlooked, with the effect of deterrence threat assumed to be robust.

Delimiting the Discussion

Discussing the role of nuclear weapons after the Cold War is elaborated involves informing the analysis with an understanding of the role nuclear weapons actually had or were assumed to have during the Cold War. The development of nuclear arsenals did affect a change in military strategy. Their presence and seemingly unlimited destructive power imputed strategy with a degree of complexity that gave birth to a paradox. This paradox, which we will discuss in depth below, renders the second line of discussion the more important. Because a successful nuclear strategy depends on these weapons never being used, it is the *politics* of nuclear weapons in international relations that ultimately defines their role. If the politics of nuclear weapons change, and arguably they have, then the ability to use nuclear weapons as a "deterrent umbrella" is no longer assured and the postulates of nuclear deterrence rendered less robust. If deterrence is rendered less robust, then the continued use of classical deterrence theory -- as operationalized in US military strategy -- may indicate epistemological problems in the promulgation of national military strategy. A related point of deterrence theory is that deterrence is a promise to act that fails when action is required.

In order to resolve the questions concerning the role of nuclear weapons in international relations, this section examines nuclear strategy and the political role of nuclear weapons after the Cold War in four parts. First, a brief review of the history of nuclear strategy sheds light on its evolution into a "non-strategy." Second, threat perception and military theory are assessed to determine the role of nuclear weapons in military doctrine. Third, John Mueller's contention that nuclear weapons are irrelevant in global politics is reviewed and critiqued. Finally, I discuss the role of nuclear weapons after the Cold War. The purpose is to preempt arguments that nuclear weapons are irrelevant; to frame the discussion of Thomas Schelling's deterrence theory by examining the role of nuclear weapons after the Cold War; and to set the stage for a conceptual framework that links Schelling to the evolving operational environment.

What Legacy Nuclear Strategy?

Lawrence Freedman concludes his seminal work, The Evolution of Nuclear Strategy, by lamenting the evolutionary end-state of nuclear strategy: "C'est magnifique, mais ce n'est pas stratégie." Freedman posited that, "the position we have reached is one where stability depends on something that is more the antithesis of strategy than its apotheosis - on threats that will get out of hand, that we might act irrationally, that possibly through inadvertence we could set in motion a process that in its development and conclusion would be beyond human control and comprehension."⁵ Here we are concerned less with the theoretical underpinnings of nuclear strategy than the operationalizing of deterrence as *the* US national military strategy during most of the Cold War. While the distinction may appear subtle, there is an essential difference. On the one hand, the deterrence theorists discussed here crafted and shaped what were mostly academic theories that attempted to analyze, describe, and explain deterrence. On the other hand lies the intentional, deliberate adoption of deterrence as a national strategy entrusted to dissuade aggression or the threat to use force.

Nuclear strategy, arguably, evolved during the last decades of the Cold War into a non-strategy from a military standpoint, a trend that completed the historical progression of nuclear strategy: the gravitation of thinking and discussion about the role of nuclear weapons in both international security affairs and US grand strategy toward the political, as opposed to the military, realm. It is the realm of politics, not military science, that must be the focus of a discussion over the role of nuclear weapons after the Cold War. This section sets the stage for those that follow by reviewing why nuclear strategy has become less and less a military, or even a "strategic," one. For some, this is simply a latter-day formulation of the Clausewitzian precept that war, as an extension of politics, should be guided by political objectives. However, there is a subtle yet important difference between guiding warfare to achieve political objectives and allowing political factors to control the internal aspects of military and strategic doctrine.

⁵Second Edition (New York: St. Martin's Press, 1989), p. 433.

The Splintering of Strategy

For Martin van Creveld, the evolutionary path of military strategy was "splintered" by nuclear weapons into "nuclear strategy, conventional strategy, grand strategy, theater strategy, economic strategy, and other types too numerous to mention."⁶ Van Creveld argues that the splintering of strategy led to so many uses that the very word "strategy" was no longer appropriate. By the 1980s, moreover, the U.S. military began substituting "strategy" with the phrase "the operational art of war," which was subsequently "adopted as the core subject at most military institutes of higher learning."⁷ Operational art focuses more on the orchestration of combined arms *conventional* forces than on the use of nuclear weapons, and, to the extent that it has pushed doctrine and tactics toward maneuver warfare, has fostered positive changes in US operational doctrine.

Progress in the realm of nuclear strategy, on the other hand, has been illusory from the warfighter's point of view: "[w]hereas traditional strategy had been associated with war, much of nuclear strategy operated only in peace and, indeed, was specifically designed to preserve it."⁸ The only successful strategy for nuclear war, it seems, is not to fight one; the only successful nuclear strategy, therefore, is to present potential aggressors with the image of nuclear capability that is combined with a effective political signal. For van Creveld, the evolution of technology, the splintering of strategy, and the mounting insignificance of nuclear planning provide one explanation for the decline in nuclear strategy:

The remarkable fact about all these strategies was that the more numerous and sophisticated the technical means available for their implementation, the more pointless it all seemed. A quantitative analysis of American war plans drawn up over the years supports this claim: From 1945 to 1950 the Air Force is said to have devised ten different blueprints for a nuclear offensive against the Soviet Union, an average of just under two per year. During the next decade (1951 to 1960) the number dropped by three-quarters, to one every two years. Between 1962 and 1993 there were only three such plans, an average of little more than one every ten years."⁹

This brings us back to Freedman's conclusion, albeit on a different plane: any strategy that attempts to define a strategy for fighting a nuclear war is non-strategy. Additionally, Freedman suggests that "[t]he study of nuclear strategy is therefore the study of the nonuse on these weapons."¹⁰

Threat Perception and Military Theory

"[M]odern military theorists," argues Christopher Bellamy, "tend to be sharply divided: those who deal with nuclear issues, frequently in an almost scholastic way, and those who deal with the conduct of 'conventional war,' believing that the conduct of warfare ends with the use of nuclear weapons."¹¹ The splintering of strategy and the bisecting of military theory is significant to the debate over the role of nuclear weapons in international relations and the analysis of deterrence theory because it indicates the theoretical orientation of existing military theories. For Robert Jervis, "[w]hat is important are the political effects that nuclear weapons produce, not the physics and chemistry of the explosion. We need to

⁶Nuclear Proliferation and the Future of Conflict, p. 53-4.

⁷*ibid.*, p. 57.

⁸*Ibid.*, p. 59.

⁹*Ibid.*, p. 58.

¹⁰ Freedman, *The First Two Generations of Nuclear Strategists* in Peter Paret (ed) Makers of Modern Strategy: From Machiavelli to the Nuclear Age (Princeton: Princeton University Press, 1986), p. 735.

¹¹The Evolution of Modern Land Warfare: Theory and Practice (New York: Routledge, 1990), p. 54.

determine what these effects are, how they are produced, and whether modern conventional weapons would replicate them."¹²

Indeed, what is important to consider is not the actual effects of nuclear weapons on the battlefield but their *perceived effects* in the minds of decision makers. This means, of course, that the debate must enter imprecise areas such as perception and psychology, which takes us into the realms of deterrence and threat perception and the intersection of the theories of military science and global politics. It also there area in which operations research and analysis can be rendered invalid when perception and other cognitive variables are incorrect.

The analysis and study of threat perception is as important after the Cold War as during. As Raymond Cohen observed: "threat perception, if anything, is the decisive intervening variable between event and reaction in international crisis."¹³ Cohen's conceptual framework for the analysis of threat perception follows J. David Singer's equation, "Threat-Perception = Estimated Capability x Estimated Intent."¹⁴ The debate over the role of nuclear weapons in post-Cold War international relations remains concerned with threat perception, but often the focus is on intent or credibility alone, not their interplay. In cases of asymmetric war, where weaker states initiate war against more powerful states, threat perception is often the chief causal variable mitigating the rationale for a seemingly irrational attack against a more powerful adversary

It is conceptually easier to determine -- depending on the quality and quantity of intelligence -- the strict technical capability of a state's nuclear weapon; it is much more difficult to assess aggregate national military capability, which combines warhead development, delivery vehicles, targeting, and operational deployment/employment factors. Determining intent can be harder or easier than determining capability -- much depends on history, learning, established communication and conflict management regimes, cross-cultural understanding, the contextual situation (stable or unstable?), and the level of "noise" in the communication process. Schelling's attention to cultural factors and the way they shape communication in conflict relations elevates the value of his conceptual framework and its ability to address multiple scenarios embedded within diverse socio-political contexts.

Pakistan and India have no trouble communicating their intent regarding nuclear weapons, which are clearly used to delineate an escalatory threshold at which weapons of mass destruction will be employed (politically and then militarily) to signal deterrence. Here the intent is to announce that conventional gains or irredentist claims will be off-set by the use of nuclear weapons. In other areas, such as the use of nuclear blackmail, the intent of a party may be much harder to ascertain. But, as Cohen points out, threat perception must consider more than assessments of capability and intent in a given crisis - it must be based on underlying cognitive characteristics that define, at the ontological level, those factors that influence how threats are perceived as opposed to how they were intended to appear. Moving from global deterrence to regional deterrence will entail a re-evaluation of incentive structures and how they can be manipulated by threats to use force, or, in Schelling's words, the power to hurt as a means to enhance bargaining power.

Where is the Warfighter?

As in the evolution of nuclear strategy, the rigors of threat perception have moved the debate away from the warfighters - airmen, sailors and soldiers - who are called on to implement policy and, as Bellamy observed, often view the use of nuclear weapons to be a war-ending, not fighting, event. (This view reflects the use of nuclear weapons in most wargames and simulations, which are ended or re-started when nuclear weapons are employed.) In the end, the analysis of post-Cold War threat perception concerning nuclear weapons, and the very role nuclear weapons assume in international relations, must consider how nuclear weapons are perceived by each actor or potential belligerent. (For example, while the US and other

¹²"The Political Effects of Nuclear Weapons" in *International Security* (vol. 13 no. 2), p. 83.

¹³*Threat Perception in International Crisis* (Madison: University of Wisconsin Press, 1979), p. 3.

¹⁴"Threat Perception and the Armament Tension Dilemma," *Journal of Conflict Resolution* (vol. 2, no. 1), pp. 93.

Coalition members took away from the Gulf War a sense that a new generation of precise conventional arms would decrease the need for weapons of mass destruction, the view from other capitals was that if you were going to war against the US you had better have nuclear weapons or other mass-casualty producing weapons.) In the current operational context, the analysis of strategic operations and the utility of force as a bargaining instrument are both conditioned by the implications of the second RMA mentioned above. Advances in conventional weapons technology, especially in the area of sensor-to-shooter command and strike architecture, are leading to a situation in which operational commanders will have the ability to conduct operations throughout the levels of warfare (tactical, operational, strategic) and possibly replicate the effects of smaller nuclear weapons using precise conventional weapons.

Military theory, then, is left with a paradoxical situation. Military science is left with technology, targeting, test-bans, and telemetry data - but no tactics or doctrine meriting the title of military theory. Military theory is rich in doctrine and tactics detailing how different offensive and defensive conventional weapons can be combined to produce success. Historical data reaching back to Thucydides informs military theory and how the four main arms (heavy cavalry, light cavalry, heavy infantry, light infantry) are used with more recent developments (air and sea) in different situations. When it comes to nuclear weapons, however, there is no useful application of military history, leaving military science in somewhat of a quandary. At the same time that nuclear weapons are made more accurate, placed on new platforms, or launched to sea on stealthier submarines, military theory was left with only one doctrinal message: nuclear weapons are effective when they are not employed. This may have sufficed during the Cold War, but in the current climate, where aggressors probably doubt the willingness of the US to employ nuclear weapons or even conventional ones, it may be that the applicability of deterrence has declined. Before discussing the role of nuclear weapons, the following analysis of a prominent "nuclear revisionist" argues that nuclear weapons did, and continue to, have a role in global politics. This discussion sets that stage for the elaboration of a conceptual framework that explores the applicability of Schelling to post-Cold War strategic thought.

Nuclear Weapons and Peace: The Mueller Argument

Nuclear weapons preserve peace, presumably, by deterring behavior - their very existence and implied threat of use dissuades an actor from engaging in certain behavior. During the Cold War, some military strategists and policy makers extended the scope of this deterred behavior to include chemical, biological, and even conventional war. According to Freedman's analysis of strategy during the Cold War, however, "[t]he lesson for crisis management is the uselessness of nuclear weapons for purposes other than deterring the nuclear weapons of the other side."¹⁵ John Mueller denies nuclear weapons even this role. Mueller contends that both nuclear strategy and nuclear weapons are irrelevant and that the Cold War would not have been much different had they never existed.

Rather than technological developments in weapons, Mueller attributes the absence of great power war during the Cold War to a "historical process" that has rendered war among developed countries repulsive and futile.¹⁶ The "war option" among developed countries has, in a way similar to that espoused by Kant, withered due to learning concerning the horrific nature of modern war and the rising cost of war. In his thesis, war among developed countries will only be found in the history books and, despite arguments to the contrary, the relationship of nuclear weapons to the withering of the war option was merely coincidental. While nuclear weapons did effect the way we talk about war and how states spend money to prevent war, "it seems that [the Cold War] would have turned out much the same had nuclear weapons never been invented."¹⁷

In an *International Security* article entitled "The Essential Irrelevance of Nuclear Weapons," and a book chapter entitled "Nine Propositions about the Historical Impact of Nuclear Weapons," Mueller

¹⁵Op cite., p. 259.

¹⁶*Retreat from Doomsday: The Obsolescence of Major War* (New York: Basic Books, 1989), p. 4.

¹⁷ibid.

focuses on the role nuclear weapons had, or didn't have, in Cold War international relations.¹⁸ His main points include, but aren't limited to:

1. The deterrent effects of nuclear weapons are misinterpreted because large-power war was already deterred by:
 - The memory of how destructive and devastating World War II had been.
 - In the late 1940s the only powers capable of initiating another world war were satisfied with their respective spheres of influence.
 - The USSR stressed subversion, "economic pressure," and other tactics - not full-scale war as a means to expand its influence.
 - The belief that conflict quickly escalates out of control.
2. In addition to the insignificant role nuclear weapons had in deterrence, they were not a major factor in alliances, crisis management, or stability because:
 - Post-war alliance patterns were affected by wartime diplomacy not the splitting of the atom.
 - Post-war alliance patterns had ideological roots that are distinct from nuclear weapons.
 - The calculus of options in a crisis environment recalled the non-nuclear horrors of world wars, not the image of Hiroshima on August 9.
3. Bipolarity was a product of US-Soviet disagreements, not the correlation of military forces:
 - US policy in Europe predated the development of nuclear weapons.
 - It was the lesson taught by Munich, not the atom bomb, that informed US diplomacy.
4. Japan could have been convinced to surrender in the absence of the bomb.

Responding to Mueller

Responding to Mueller is as difficult as proving him correct - the discussion ultimately turns to epistemological, ontological, and psychological arguments. Since we cannot return to the 1940s and dis-invent the bomb, we cannot conclusively prove what effects atomic and then nuclear weapons had on post-War international relations. And, as E.H Carr cautions, we should not make absolute knowledge claims or remove events or elements from historical analysis. "Nothing in history is inevitable," Carr posited, "except in the formal sense that, for it to have happened otherwise, the antecedent causes would have had to be different."¹⁹

The first criticism leveled at Mueller, therefore, is his denial of the effect that nuclear weapons might have had on the thinking underscoring decision making during the Cold War. The fact that these weapons did exist cannot be ignored, nor can we disassociate knowledge of their existence from decision making. While they may have served to merely amplify trends rather than create them, we cannot ignore their effects on leaders and their constituents, nor can we deny the effect nuclear weapons had on what Mueller calls "subrational" thinking. Millions of children were not forced to practice air raid drills and thousands of families did not dig bomb shelters because they thought nuclear weapons were insignificant or would never be used. And, as Robert Jervis argues, we cannot ignore the political effects nuclear weapons had across the range of foreign policy decision making.

Jervis' response to Mueller's view of the role of nuclear weapons during the Cold War can be summarized in the following points:

¹⁸Points 1 and 2 are from *International Security* (vol. 13 no. 2), pp. 45-71; the remainder are from his chapter in Jorn Gjelstad and Olav Njolstad (eds), *Nuclear Rivalry and International Order* (London: SAGE Publications, 1996), pp. 55-74.

¹⁹*What is History?* (New York: Vintage Books, 1961), p. 125-6.

- Nuclear weapons -- more so than conventional arsenals -- explain superpower caution during the Cold War.
- Decision makers were conscious of the enormous devastation a nuclear war would bring.
- Decision makers were aware that neither side would be spared this devastation.
- In contrast to previous wars, the devastation would happen very fast and, once initiated, could not be stopped or reversed.
- Mueller misrepresents the differences in destruction caused by a conventional versus nuclear war -- the destruction caused by a nuclear attack would be immediate, total, long-lasting, and not confinable.
- Mueller misinterprets the role of World War II in his analysis:
 - In opposition to the experience of the losers of World War II, where many of the citizens went on to prosper after the war, both the winners and loser of a nuclear war could not expect a return to pre-war life.
 - The countries that started World War II were destroyed, most of the Allies were not. This outcome would be impossible if nuclear weapons were used.
- In the absence of nuclear weapons, states would have undoubtedly pursued conventional arsenals that would inflict higher and higher levels of damage *and* they would have pursued ways to reduce the costs of victory.
 - In addition to pursuing ways to limit the costs of victory, states might have believed a quick victory was possible.
- Extended deterrence would have been more difficult without nuclear weapons.
- Escalation along a conventional pathway would not have the threshold of nuclear weapons to instill caution in leaders.

In addition to these arguments, it is important to consider the effect nuclear weapons had on the evolution of strategy and military doctrine. As mentioned above, one effect nuclear weapons had on the theory of warfare was a splintering of strategy and doctrine. The distinctions made among conventional, nuclear, and guerrilla warfare channeled thinking about options in foreign policy. It is the legacy of this channeling that we must cope with today when fashioning military strategy to account for potential crises that were absent during the Cold War.

III. What Role After the Cold War?

Introduction

While conclusive data does not exist concerning the role of nuclear weapons after the Cold War, the following issues and conceptual "slices" serve as discussion points for further work. Essentially, nuclear weapons are primarily useful as a deterrent against other nukes. Experience in the Gulf War suggests, that if intentions are made credible, then the threat of nuclear retaliation may deter the use of chemical and biological weapons as well. In addition to these deterrent effects, nuclear weapons are also involved in alliances politics, prestige, and other areas of international security affairs.

Problems With Banning the Bomb

If the bomb is banned, as some would like it to be, then the chances of getting it and the platforms that deliver them back will be very difficult due to the political consequences. Once their gone, therefore, they may be gone. This applies more to existing nuclear powers than to the nuclear threshold states, who may see opportunity in such a situation and engage in covert nuclear programs.

Exercise Prudence When Decreasing Stocks

While prudence argues that it is a good idea to work toward decreasing the number of nuclear weapons in the world, prudence should be taken on assessing the final numbers of weapons left in arsenals. Too low a number will make a new nuclear state more powerful, perhaps, because the value of one nuclear

weapon may rise. This is also true of banning nukes. If they are banned, then one weapon is suddenly more powerful.

Alliance Maintenance

The US giving up its nuclear weapons, or announcing that it would do so, may be something like the Athenians announcing to the Delian League they are giving up their ships. Our Allies have come to depend on US security guarantees, one of which involves extended deterrence.

A Threshold for Political Use

Even if no military use exists for military weapons, there are several political uses that cannot be discounted. Nuclear weapons continue to provide a useful avenue for US-Russian diplomacy, especially when relations turn sour. Not only do they remind leaders of the consequences of not keeping relations amiable, they are often an excellent way to engage on an issue when other areas of discussion are "of the table." Nuclear weapons also constrain inflammatory rhetoric, for it is not politically acceptable to discuss the use of nuclear weapons as the next step in an escalation process.

Subrationality

For Mueller, war has not occurred in the Western world because the war option is "subrationally" unthinkable: war has been pushed out the cognitive realm at the conscious and unconscious levels. However, war remains alive in the minds of many leaders and peoples in the non-Western world. Nuclear weapons may be useless in a military sense when conducting peacekeeping operations, but nuclear weapons may deter some would-be hegemonies from going to war.

Uncertainty

The Cold War may be over, but there is no reason to assume that another will never arise. We can not know the future nor can be assured that future international relations will not need the deterrent effect of nuclear weapons to stave off great power war.

Asymmetric Battlefields

The clear conventional advantage of the US has already turned potential adversaries toward weapons that offer a "leveling" effect on the battlefield. North Korea is developing weapons that can be used against ports and airfields that the US would use to stage equipment or to base air assets. Attacking these sites with chemical or biological weapons can impede US forces and could, potentially, lead to a political crisis in American domestic politics or a loss of US political will to remain engaged. North Korea has, in the past, pursued nuclear weapons as well. While it is unlikely that the US will use nuclear weapons against North Korea, the psychological effect of nuclear deterrence remains an important component in the region.

IV. A Deeper Problem In US Strategic Thought?

Introduction

The legacy of the dominance of nuclear strategy on US military-strategic thought is difficult to analyze independently of a larger problem in our historical approach toward strategic thinking. In recent years much of US military doctrine has been inseparable from claims that technological advances in weapons systems have led to a quantitative leap in US military capabilities. Underlying this reification of technology when contemplating future changes to warfare is a syndrome that Alex Roland observed in the evolution of US military thought and strategy, which for most of American history occurred along with a tendency to ignore technology altogether. "Americans are a pragmatic people," he argues, and "one reason for the invisibility of technology in American strategic thought is that there *has not been all that much*

American strategic thought [and, in the past] Americans invented a strategy each time they went to war."²⁰ Since World War II, however, the role of technology in warfare has become more visible and, among the services that emerged out of the National Defense Act of 1947, technology and strategy have been linked through inflated operational values assigned to progressively better weapons platforms and the weapons systems carried by them.²¹ After much reflection upon the role of new technologies developed and proven during World War II (e.g.: radar, jet engines, carrier aircraft, atomic bombs, missiles) it became clear to military officers that "[q]uality of arms replaced quantity as the desideratum of warfare."²²

An increasing focus on the role of technology in warfare is, arguably, a theme running throughout post-War US military thought. Over the course of the last decade, however, techno-centrism and techno-centric assumptions about the future of warfare have engendered an RMA-is-here argument that makes *a priori* assumptions about the performance-enhancing, or "force multiplying," role of weapons that have yet to enter active service. This reification of technology is one of the greater problems with US military theory and one that stalls organizational and doctrinal adaptation to a changing security environment. Related to this theme is the shift in US military officers' perception of new technology, which has changed from placing stock in tried and true weapons, arms, and "old workhorse" vehicles, to one that assumes new weapons will outperform the old. This attitude is counterintuitive considering the fact that most of the "high tech" weapons in service today have been in use or in testing and development phases for decades.

Strategy and Technology

Starting after World War II, especially for the Air Force and Navy, the choice of platforms and weapons systems became inseparable from strategy, a situation Roland cogently states: "[c]hoose battleships or submarines and you choose strategy; choose bombers or fighters and you similarly define the game."²³ The Army's search for technologically superior main battle tanks, attack helicopters, air defense missiles, and self-propelled artillery platforms -- all linked through a sensor-to-shooter command and control architecture -- has similarly elevated the role of technology in ground warfare. Indeed, the evolution of the US Army's "AirLand Battle" doctrine details an embracing of technological factors in warfare more than a concerted effort to reverse the Army's traditional proclivity for attrition warfare. The 1976 publication of Army Field Manual (FM) 100-5, *Operations*, the first step in this evolution, was the adoption of an active defense doctrine in the model of the German elastic defense of World War I (although it was inspired by the successful Israeli armor defense of the Golan Heights against superior Syrian forces in 1973). The promulgation of AirLand Battle doctrine, which began in the late 1970's, was driven by the fear of an enhanced Soviet conventional superiority. From the start, the US response to this fear was closely associated with measures that focused on technology to reduce the threat of a Soviet conventional breakout attack.

A prominent feature of the 1982 version of FM 100-5 was the concept of "Deep Strike," which called for attacks throughout the strategic depth of Soviet forces. Deep Strike, also known as Follow-On Forces Attack (FOFA), was promulgated alongside a bevy of high-tech command and control networks and new weapons systems intended to provide operational commanders the ability to mount attacks deep into Soviet-controlled territory in order to disrupt Soviet "operations tempo" (optempo) and echeloned maneuver formations. Deep Strike was a response to developments reported by British defense analyst Christopher Donnelly and other Soviet-watchers: analysts had reported changes in Soviet operational art, which really amounted to a return to the Soviet's traditional attraction to large maneuver units. Basically, these changes proscribed the penetration of large-scale, independent maneuver formations deep into Western Europe.

²⁰ Aelx Roland, "Technology, Ground Warfare, and Strategy: The Paradox of American Experience," *The Journal of Military History* (vol. 55 no. 4), p. 453-4. Emphasis added.

²¹ The most comprehensive analysis of service identities and the approach that service takes to technology is Carl H. Builder's *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore: The Johns Hopkins University Press, 1989).

²² Roland, p. 461.

²³ *Ibid.*, p. 454.

The publishing of the 1982 version of FM 100-5 continued the focus on technology, although it was upheld to be a turning point in US Army doctrine. Because it emphasized that a robust maneuver capability was as important as firepower on the battlefield, the 1982 version infused the American military lexicon with heightened sensitivity to maneuver warfare theory.²⁴ The most recent edition of *Operations* led to ever more sophisticated weapons systems, most of which were conceptualized and designed for war in Europe against the Warsaw Pact. The trend toward a maneuver approach, however, has received more lip service than doctrinal or organizational change toward an ideal non-linear approach to warfare.

The RMA and The Reification of Technology

The Soviet conventional arms build-up that led to the 1976 edition of FM 100-5 was actually a phase in the Soviet response to what was perceived to be a nuclear RMA, which was first promulgated in the 1950s. While not often recognized as such, the currently proposed US RMA is an outgrowth of the technologically-oriented response to the 1970s Soviet conventional build-up, which sought to endow operational commanders with the ability to attack echeloned Soviet forces before they could speed through NATO defensive lines. While the AirLand Battle remains an important development in US Army doctrine, the tendency of AirLand Battle to seek technological solutions to operational problems has been criticized. For example, Steven Canby observed that "the new technologies for implementing the Deep Attack concept have been undercosted by an order of magnitude;" he further argued that: "the concept proceeds from a false syllogism, and the concept itself is not feasible" because "[t]he vulnerabilities Deep Attack presumes in the opposing force do not exist; its automated command and control leads to deceptions and inflexibility; and its submunitions can be easily countered."²⁵ Nowhere is the reification of technology more prominent than in the *a priori* acceptance of a techno-centric new Army doctrine that blindly assumes that emerging technologies will resolve operational, command and control, and other problems. Moreover, techno-centric solutions to operational problems often mean damaging reductions in troop strength, training programs, or other slices of the budgetary pie. A continuing process of sapping the strength of such programs to pay for new technology has military officers concerned that "the Quadrennial Defense Review's (QDR) focus on high-technology weapons may result in US troops being ill-equipped for the type of combat expected in 2010."²⁶

The techno-centrism of AirLand Battle is part of the "syndrome" Roland identified in American military theory, which has implications for any study of the theoretical assumptions underlying the RMA-is-here argument -- including what appears to be the RMA's blind faith in technology: "Where inventors used to come to the military hat and plans in hand, the military now goes to the laboratory, specifications in hand for a faster plane, a quieter submarine, a more powerful tank. Instead of supply push, military technology now functions on demand pull."²⁷ The reification of technology, exhibited in the current RMA debate, reflects this "demand pull" nature of modern military planning which, often times, is articulated under the

²⁴The evolution of the US Army's Field Manual (FM) 100-5, *Operations*, is a fascinating example of how organizations develop a common understanding of mission, challenges, and priorities while attempting to respond to changes in the environment in which these factors are nested. One of the more interesting sections of *War and Anti-War: Survival at the Dawn of the 21st Century*, by the futurists Alvin and Heidi Toffler, is a history of the writing and rewriting of *Operations* from the late 1970s through to the 1993 edition. (New York: Little, Brown, and CO., 1993), chap. 7. For a critical analysis of a failed attempt to have an earlier version of FM 100-5 accepted and institutionalized by the US Army, see Paul H. Herbert's *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* (Ft. Leavenworth, KS: US Army Command and General Staff College, Combat Studies Institute paper no. 116, 1988). See also Kenneth Allard, *Command, Control, and the Common Defense* revised edition (Washington: National Defense University, 1996), pp. 172-188.

²⁵Steven L. Canby, "The Conventional Defense of Europe: The Operational Limits of Emerging Technology," Working Paper no. 55, Wilson Center (Washington: Smithsonian Institution, 1984), p. 1

²⁶Robert Holzer, "QDR's High-Tech Focus Worries Ground Forces," *Defense News* (March 24-30, 1997), p. 19.

²⁷Roland, p. 466.

assumption that a technological fix will overcome the human element of warfare, the ageless "fog of war" problem, and the fear of politically damaging casualties. And associated with the "demand pull" syndrome is the ever-present desire to achieve technological surprise on the battlefield.²⁸ As techno-centrism is likely to remain part of greater US popular culture and society, it is clear that examining assumptions underlying Roland's syndrome will lead to further enlightenment of the epistemology underlying US military theory by forcing us to analyze "why" and "how" we believe something to be true or false about future military operations. This type of analysis is also needed to fully understand the role of deterrence in international security affairs in an "anti-nuclear" era that has witnessed the decreasing role of nuclear weapons in international politics.

War and the Human Dimension

The proclivity to accept techno-centric military solutions to battlefield problems is related to larger socio-cultural issues. Recognizing this relationship indicates the need for a greater sensitivity to cultural issues and the exigencies of studying the persuasiveness of cultural attitudes. Despite the tendency to look toward technological solutions to security problems, deterrence is based on psychology, not hardware. The answers to deterrence issues might be informed by investigation of the relationship between Roland's "syndrome" in the US military and the growing orientation toward technology in American culture. Such an investigation could lead to a debate on the cognitive ramifications this technological orientation has for the military as an organization that must be focused on war -- which remains a decidedly *human* activity -- and how different leaders perceive US military capabilities. Analyses of deterrence after the Cold War have largely ignored such a discussion. Instead, the RMA-is-here argument has promoted a reification of technology as the fundamental concern of modern warfare and the chief ingredient of success in both war and deterrence -- all without a discussion of how US intentions and capabilities are perceived by foreign governments as credible deterrent threats. In doing so, it has not only imputed into the examination of US military theory with fanciful images representing ideal applications of emerging technologies, it has fostered the belief that these conceptual images are actual or assured advances in battlefield performance and the capability to deter. Such "leaps of faith" focused on technology are often accompanied by ambiguous explanations, thoughtless definitions, and/or insensitivity to the rigor required of theory-building. What is needed is a conceptual framework more conducive to theory-building: this is the arena in which the works of Schelling and others can be applied

V. Deterrence for an Anti-Nuclear Era

Introduction

The previous discussion of the role of nuclear weapons in global politics clarifies the theme of "Schelling meeting 2010" in three ways. First, it provides some idea of the limits and utility of nuclear weapons within an international security structure that has moved from tight bipolarity to loose bipolarity and then to severe system decomposition. Throughout history, including the Cold War, military force has been the natural partner of diplomacy, perhaps even providing the impetus for the development of a European system of diplomacy to avoid the costs of frequent wars. Schelling's work at the beginning of the

²⁸Michael I. Handel defines technological surprise as "the unilateral advantage gained by the introduction of a *new* weapon (or by the use of a known weapon in an innovative way) *in war* against an adversary who is either *unaware* of its existence or *not ready* with effective counter-measures, the development of which requires *time*." [emphasis in original] "Technological Surprise in War," Intelligence and National Security (vol 2 no 1), p. 3. Much of the RMA-is-here crowd's argument about the revolutionary effects of technologically superior weapons systems seems to depend upon the achievement of technological surprise, which differs in theory from tactical or strategic surprise. However, it may be that the advent of more sophisticated, more precise, and more lethal weapons will allow the US military to achieve tactical and operational surprise, which would call for a re-focus of the current RMA-is-here argument away from the more difficult to achieve vision of a revolutionary "technological surprise." While the difference may seem to be one of semantics, in practice it may in fact be the difference between revolutionary and evolutionary change.

bipolar nuclear era elaborates important conceptual links between force and diplomacy that can be used to re-analyze the same links after bipolarity. As the US finds itself increasingly turning to non-nuclear deterrence options (conventional, economic, political,) the theoretical understanding of the role of pain in bargaining becomes more important. Most contingency plans now include FDO's that the regional CINC can use before going to war.

Second, the decreased role of nuclear weapons in global politics begs the question of how to retain stability as the international system awakens from the constraints of bipolarity. The coercive effects of nuclear weapons may have modulated superpower relations by delineating certain thresholds that would initiate an escalation ladder quickly leading to nuclear posturing. Brinkmanship, the art of managing risk, describes a situation in which two sides of a conflict, armed with nuclear weapons, sought to convince each other that they were willing to absorb the costs of war to achieve a gain. The threat to use nuclear weapons is no longer the arbiter of these "chicken games" among parties to a conflict. International politics has moved away from a focus on nuclear weapons and toward an idea of "soft power" -- economic, social, technological, and other aspects of society that endow a state with power. At the same time that the technologically advanced, post-industrial countries are turning away from military force as a tool in diplomacy, regional powers continue to exhibit signs of irredentism, rabid nationalism, and the forceful projection of one's own ideology onto others. Economic sanctions and other non-nuclear deterrence strategies may not work against would-be regional hegemon. A fine line exists between deterring behavior and the need to compel an actor to reverse or alter behavior. Schelling's conceptual framework addresses these and other concerns of post-nuclear international security affairs by enabling analysts to deconstruct conflict and examine the role of force in strategic relationships.

Finally, it is important to realize that strategic nuclear weapons are no longer the primary tool of international stability -- the structuration of global politics is no longer decided by a set of bipolar ideological differences stabilized by nuclear parity. The paradox of nuclear deterrence -- to maintain peace you must threaten to destroy the world -- is no longer the operative cognitive element in our perception of how international security affairs are structured. Strategic operations are changing in a number of ways, including the possibility of using precise conventional weapons and information warfare to paralyze the command and control systems of an aggressor state without causing mass casualties. This may lead to a further "splintering of military strategy." However, it may also lead to an opposite situation -- military theory and strategy may return to a more linear progression where the levels of military planning are made more cohesive and the gulf between strategic and operational levels of war decrease. This section continues to examine the role of deterrence in post-Cold War security affairs by elaborating some assumptions of deterrence, by presenting problems associated with their use to guide post-Cold War military planning, and by suggesting how deterrence requirements have changed.

Six Deterrence Assumptions

This conceptual overview of deterrence assumptions during the Cold War is not a comprehensive list of the assumptions underlying all deterrence behavior. These assumptions have been selected because they have retained their currency in the realm of strategic thinking even though they may not apply within the evolving operational environment in the same fashion that they did during the Cold War. They remain prominent in our collective consciousness as part of the cognitive schema that guides and shapes the way we think about strategic operations, especially those that extend into diplomacy certain ideals that are based on the memory of past successes. As such, they are readily available tools to assist in an application of Schelling's classical deterrence theory as a first step in re-evaluating post-Cold War deterrence theory. The opening parts of this section briefly sketch ideas and concepts in deterrence theory and its application. Most of the concepts are derived from a reading of Schelling and other deterrence theorists, but are now considered common enough that they do not need attribution. In the last part of the section several of Schelling's more applicable concepts will be discussed in relation to the current operational environment.

1. Risk Aversion

Deterrence assumes that the deterred party is able to identify risk and respond to it by exhibiting risk adverse behavior -- avoiding behavior that will bring pain. Deterrence is a psychological relationship built upon perception, intentions, credibility, and the ability to manipulate incentive structures. This psychological relationship is primarily a strategic one, where each actor evaluates actions on the expected responses of another. To declare deterrence as a strategy is to communicate to real and potential adversaries that you are assuming, or expecting, them to recognize the risk inherent in certain actions and to avoid it. Essentially, risk aversion is pain aversion, and deterrence assumes that actors will avoid pain if and when they can. Behavior is assumed to be conditioned by the ability to recognize and base decisions on incentive structures, which in turn are derived out of complex internal mechanisms structured upon value systems, belief systems, and theories of human relationship. A robust deterrence situation exists when a contextual nexus develops where two or more actors have a common aversion to risk, usually grounded in parallel misgivings about the costs associated with the clashing of military forces. Deterrence comes when one actor convinces another that it will accept some risk in order to prevent another from crossing some line -- a threshold. Deterrence is destined to fail if actors are willing to absorb pain in order to pursue objectives. Models of deterrence behavior, usually built upon the assumption of a rational -- or strategic -- man, quantify behavior to produce payoff matrices and multiple-decision pathways that aid strategic analysis. Without a detailed analysis of an actor's disposition toward pain in different situations, a deterring actor can never be sure that deterrent threats are working.

2. Identified Common Interest

In addition to a degree of risk aversion, deterrence assumes a degree of common interest. Of course, there is a subtle relationship between risk aversion and common interest. To share aversion to risk is to share a common interest in avoidance. Robust deterrence relationships, however, include some degree of overlapping interests that actors internalize even while they come to understand dangers inherent in the pursuit of opposing interests. A healthy mix of mutual risk aversion and overlapping interests provides a pillar on which a deterrence relationship can be amplified. In deterrence, the assumption of common interest is often demonstrated in the use of mixed incentives, or the use of "carrots and sticks." Pain is promised by the deterrer as a consequence of pursuing behavior. Conversely, not engaging in this behavior brings rewards from the deterrer, even if in the form of prestige or a sphere of influence. In crisis situations is often beneficial for the deterring party to create a situation in which the decision to escalate or diffuse conflict rests with the other party. The analogy Schelling and others often use is placing a car in the middle of the road when an enemy is bearing down, and then turning the car off and throwing the keys out the window. This is a situation that lies between deterrence and compellence -- parking the car forces the party to swerve in order to avoid pain. If collision cannot be avoided, both parties are hurt. The key to deterrence in this situation is clarifying the overlap of common interest -- to avoid the collision. To operationalize deterrence in such a situation requires that the deterred party believe that the deterring party will sit idle in a car awaiting certain injury in order to deny anyone from traveling further down the road.

3. Ability to Control Situation

Because deterrence involves engendering a psychological state able to control behavior, a deterrence strategy assumes the ability to control a strategic situation by manipulating internal elements by presenting physical threats. As previous comments indicated, deterrence involves control at the cognitive level by affecting a change in the incentive structure of the actor to be deterred. Deterrence also involves controlling the field of policy options and their prioritization. This field can be expanded or contracted by a deterrence relationship depending upon the specific bargaining structure that arises between actors. An assumption underlying a deterrence relationship, control also extends to the patterns of operations and diplomacy that are manipulated to effect signaling and other communication. Essentially, by assuming that different levels of a situation can be controlled by promising pain for wrong behavior, deterrence assumes that, as a strategy, deterrence is a prescriptive policy able to shape a future strategic context.

4. Reciprocity and Feedback

The assumption involving two elements -- reciprocity and feedback -- is an important concept in deterrence theory. The idea of reciprocity is the easier element to understand. It involves responding to an act by returning like behavior and, as a form of shadow game, underlies both conflict and cooperative relationships. Reciprocity is responding in kind. Expectations and learning are conditioned by reciprocal relations as actors come to trust and anticipate behavior. Pure reciprocity is steady-state feedback in which action and reaction cannot be differentiated and the course of a relationship remains constant. In most relationships, however, feedback within the boundaries of reciprocity exists on a spectrum with two poles: positive and negative. Positive feedback reinforces a trend -- it is not a value-laden term. Positive feedback can lead to both positive and negative consequences. A positive feedback relationship moves actors down a progressively more amiable or more conflictual path until the action-reaction process is halted or reversed. Negative feedback occurs when an actor attempts to reverse or turn around the path another actor has started down. Deterrence assumes a relationship in which actors are conditioned by feedback that allows behavior to be adjusted through the suggestion that pain will be incurred as a by-product of a response to "wrong" behavior.

5. Communication Exists

Most of the assumptions above rest on a deeper assumption: communication of some form exists among actors in a deterrence relationship. The inclusion of communication as an assumption of deterrence brings all of the elements of communication theory: noise, interpretation, syntax, barriers, etc. In deterrence communication involves more than declaratory policy statements. It involves signaling, credibility, prestige, and even bluffing.

6. Thresholds Exist and Are Recognized

The final assumption mentioned here is the concept of a threshold, which is a clearly defined, recognized "line" that, once crossed, triggered a response involving the infliction of pain. This concept will be discussed in greater detail below.

The Post-Cold War Deterrence Environment

Continuing the investigation of the evolving security environment, this section explores changes in the structure of international relations that effect how deterrence functions. Most of these changes do not require elaboration to understand their implications. Further work is necessary to fully grasp the ramifications of these changes on the psychological level of conflict behavior, including how changes in the context of a security relationship alters the incentive to pursue certain options and not others.

1. System Structure: Not Bipolar or Multipolar

Deterrence involves balance. Bipolarity is essentially a dyadic relationship in which two opposing power centers create stability by finding ways to balance their power and interests such that neither can effectively gain a preponderance of influence over the entire system. A multipolar system simply makes balancing more or less complex depending upon the role assumed by additional actors. For example, if one actor assumes the role of a status quo protector, then it can combine with a second power to prevent the third from gaining overwhelming influence (this was the operative concept of the Concert of Europe). The US is the sole remaining superpower in the world. However, the system is not unipolar in the traditional sense because 1) the US is not in a position to dominate other actors in the system; 2) military power is not the primary element in state power; 3) international forums and world opinion diffuse raw military power except in cases where national interests are clearly threatened; and 4) interdependence and not what international relations theory calls "realism" now defines global politics. Deterrence in a more complex post-Cold War world cannot be expected to operate in the same manner as deterrence did within a predominantly single-dyad system. While most of the major works of deterrence theory have been oriented

on Cold War nuclear deterrence, a number of works can be applied to any situation in which force is used to bolster a bargaining position; Schelling's Arms and Influence is one of these.

2. No Peer Competitor

The absence of a peer competitor able to challenge the US in a major war provides breathing room to adapt US military strategy and doctrine for a new era. Despite claims that we are in the midst of a Revolution in Military Affairs and the publication of the Quadrennial Defense Review (QDR) there has been little in the way of profound change in the areas of military organization, doctrine, or other factor normally associated with "military revolutions." In the areas of deterrence theory and practice, this "breathing room" should be used to thoroughly re-evaluate and analyze the assumptions of deterrence theory in terms of what deterrence is expected to accomplish in the coming decade and beyond. Because we won't be trying to deter a power by threatening mutual destruction, and because the level of pain underlying deterrent threats is likely to lie below that of nuclear holocaust, the enabling of any next-generation deterrent strategy must be carefully attuned to each particular situation. The absence of any peer competitor may lead to apathy, inattention or overconfidence. Potential enemies may have less power but may also have less to lose or a greater willingness to gamble. Many of the states that are potential status quo challengers do not have the same aversion to military operations that result in the loss of life. If such cases do arise, the US may have to engage in deterrence *in war*, as it did during the Gulf War when the coalition made deterrent threats regarding Iraq's use of weapons of mass destruction.

3. Expanding Strategic Challenges and Options

During the Cold War a process of learning occurred in which the superpowers learned the "rules" of conflict behavior. Conflict resolution processes developed on multiple levels; respect and a clear understanding of intentions and capabilities were engendered; patience and communication were institutionalized. After the Cold War the routines and processes that had evolved to mediate superpower conflict no longer extend to proxy wars and spheres of influence around the globe. The US military is often the only organization capable of responding to regional challenges, a situation demonstrated by the reluctance of European states to conduct stability operations in the Balkans without US participation. In sum, the conflict spectrum has expanded rather than collapsed since the end of the Cold War. While the level of absolute devastation has decreased, the range of operations the US military must prepare for has greatly expanded. The Cold War's end has decreased superpower interest in the affairs of many states, which leaves former clients without economic, political, and military support. At the same time, it leaves them without the rewards they received for not engaging in certain behavior. As constraints on regional behavior decrease, the options available to states may increase or decrease, depending on each particular situation. Cold War deterrence rested on nuclear deterrence, which was extended down the range of conflict. Conventional clashes were deterred because it was all too easy for escalation to lead to brinkmanship and nuclear war. In regional conflicts, deterrence cannot be based on the total destruction of a country -- such threats would not be credible in the international community. As happened in N. Korea, Syria, and Iran, it is often impossible to make regional leaders alter their behavior. For the US, then, it would seem that the potential challenges stemming from the end of the Cold War, consider with the possibility that regional leaders have more options available to them, has made regional deterrence more difficult and more critical to a strategy of engagement.

4. Nuclear Effects, Conventional Means

Using non-nuclear means, the US may soon be able to replicate the effects -- in terms of annihilating command and control capability -- of first-generation atomic weapons. To do so would mean the end of a state's ability to mount an effective military operation against a force able to see and attack anything on the battlefield as well as any node in the command and control architecture. The problem with achieving this capability is that it is destabilizing in situations where a state feels that it must use its forces or lose them. After the Cold War, in conflict situations that are asymmetric, it may be more difficult for the US to achieve deterrence because leaders are "backed into a corner." Backing down against the US would bring severe domestic and regional political repercussions where forcing the US to back down would

bolster legitimacy. The deterrence relationship during the Cold War was much more robust because the level of force each side possessed was absolute and allowing a conflict to escalate to nuclear war was clearly against the interests of both parties. After the Cold War, it may be more difficult to use conventional forces to deter even aggression even if the US can achieve an RMA because regional actors do not see the same level of destruction as the natural end-state of a conflict with the US.

5. Changed Rules of the Game?

The end of the Cold War may lead to changing rules of the game in regional conflicts. In the Middle East this was the case during the Iran-Iraq War and the Gulf War. In both cases missiles were used against population centers. The ability of regional leaders to hold the populations of other states hostage is one of the factors that makes post-Cold War deterrence more difficult.

6. Working From A Non-Strategy

During the Cold War nuclear strategy evolved into a non-strategy, a process discussed in detail above along with observations about the effect of the reification of technology on US military thought. From the point of view of military history and theory, nuclear strategy during the Cold War was essentially a "non-strategy." Initiating the process to develop military strategy for a more complex era will require asking hard questions and making tough decisions. Over the last two decades there has been a slow movement away from an attrition model of warfare toward maneuver warfare, a style of warfare that requires a completely different organization and approach to military operations. Deterrence theory is inseparable from this process of re-evaluating the tenets of US military strategy. It would be productive to examine the legacy of this non-strategy on the way we think about military operations and the use of force.

7. Asymmetric Deterrence

During the Cold War there was parity among the superpowers because nuclear weapons had a sort of leveling effect on calculations of what might be gained from aggression. Despite the US having a preponderance of power in the current international environment it is impossible to determine the calculations of leaders who may engage in what Schelling called "salami tactics" -- biting off pieces and seeking incremental gains over time. The US will find itself having to engage in asymmetric deterrence in a climate where explicit military threats cannot be made without incurring political problems in world forums such as the UN. This makes deterrence a much more delicate operation than the threat of global nuclear war.

8. Regional Deterrence and Nested Games

What may be needed after the Cold War is a system of regional deterrence strategies that configure deterrent threats to particular actors in different regions. This involves altering communication and signaling so that the right message is sent to each actor. This is a much more complicated endeavor than existed during the Cold War. Of course, the stakes are much lower and the specific US national interests threatened in any regional situation may be relatively insignificant. To make deterrence work in different regional contexts the US will have to conduct deterrence as a "nested game" in which there are multiple players and multiple games, with different payoffs and strategic options throughout. The Cold War had only one important game, the wane and flux of power among the superpowers as they courted client states. The "game" has become more complicated. The exigencies of operating in a regional environment is demonstrated in the Middle East, where global, regional, bilateral, and domestic "games" are all operating within the context of the peace process.

9. Politics and Markets

Part of this "complication" is the break-down in some of the traditional boundaries between security issues and economic concerns. While there has always been an important relationship between fiscal and military security, in the last few decades national security issues have become more closely intertwined with global international economics. And as the global political economy becomes more complex and expands to include regional markets and productions centers, it will be much harder to manipulate regional dynamics from Western political capitals. Deterrence options increasingly include economic sanctions and trade restrictions as measures to increase the "pain" of engaging in certain behavior. During the Cold War rewards and punishments were often economic in nature. Still, these incentives were dominated by the bipolar system structure. Deterring behavior through economic measures will continue to overlap with military deterrence options. This overlap may increase as military capability extends its reach into the realm of "information warfare" and military forces can attack banking and other electronic systems. The legal and ethical implications of such attacks must be addressed, and from a strategic point of view such attacks must consider the international interdependence of such systems.

10. Rogue Elements and Pink Elephants

The Cold War provided a "test" of security issues: crises were evaluated against the East-West schism and/or against intra-NATO politics. After the Cold War the issue of rogue elements becomes a more complex one. NATO unity is no longer assured on security issues that do not directly challenge a NATO state. Such "out of area operations" will be more frequent and more difficult to address. At the same time there will be a greater proclivity to see "pink elephants" on the strategic landscape. Because the security landscape is more complex, it will be more difficult to determine which threats have the potential to escalate and directly effect US national interests. Deterrence threats, if used in too many situations, will lose their currency when they are critical. Part of the dilemma of moving toward a "nested game" approach to regional deterrence is configuring US military options to be able to cope with the entire range of potential threats that may emerge.

11. The Return of Identity Politics

During the Cold War, the role of identity in international politics was suppressed. Ideology was at the core of Cold War bipolarity, but the ideological struggle was not national or ethnic in character. The post-Cold War world has witnessed a resurgence in identity-related conflicts that have been grouped into the idea of a "Clash of Civilizations." Deterrence assumes some degree of rationality among actors, including the ability to understand the configuration of cultural incentive structures. Is much harder to juxtapose the pain of applied military force with the pain of an identity crisis on a national level. One of the ideas that has reappeared in this paper is the need to make deterrence theory more sensitive to cultural and sociological differences among different states that must be deterred. The infusion of identity problems into international security affairs renders them more complex and less amenable to "cookie-cutter" conflict resolution techniques.

12. Failed States

Related to the problems of identity preservation is the failed state problem. A failed state is one that collapses in on its own political, economic and other problems. When states fail, the fabric of regional and international security is compromised. Migration, genocide, famine and other problems are associated with failed states. New leaders and political parties seeking to bolster their legitimacy often turn to a tactic of utilizing outwardly directed political energy to inflame their politics and mobilize support, perhaps with promises to recapture disputed borderlands or set right some ancient wrong. The international community has had to mobilize itself to deal with the problem of failed states but, as is the case in many African cases, it is sometimes too little held too late. As these states and their leaders come to possess more powerful weapons, including ballistic missiles and/or chemical or biological weapons, the international community will find itself becoming more entangled in their affairs. Deterrence and compellence strategies will become more important in the resolution of conflicts related to failing states, a situation that will demand a more rigorous analysis of how these strategies work.

13. Proliferation Threat and Response

One of the most pressing problems facing the US after the post-Cold War is how to deal with the travails of the proliferation of weapons of mass destruction. Responding to proliferation challenges includes interdicting components and may include launching strikes to prevent weapons from being operationalized and used for coercion. Communicating US resolve to take these actions is critical to deterrence because it signals to potential proliferants that the US will inflict pain upon countries that attempt to develop destabilizing weapons. To do this effectively, the US will have to re-think how it conducts deterrence operations and when compellence becomes more important. Since most states develop these systems covertly, the US will have to engage in covert operations that may lead to the loss of US lives. This further complicates security operations and further complicates deterrence planning.

What has changed?

The following aspects of the international security environment have changed. These and other changes have made deterrence in the post-Cold War security environment more difficult:

1. Deterrence has moved from a global, bipolar structure to one that must evolve into a nested game approach able to manage regional diversity.
2. Regional powers and rogue leader will be the targets of deterrence and compellence strategies. The US does not have a very good track record in resolving regional problems quickly.
3. Ideology and identity problems will be more pronounced. As security challenges, identity-related problems are more complex and require more complicated solutions.
4. Resource scarcity is a chief element of post-Cold War security problems. The US military must harmonize its efforts to downsize with the expanding requirements of military operations.
5. Enduring rivalries and old feuds will demand increasing attention by that part of the international community that desires stability -- whether political, economic, or both. The idea of a two-level game, or the Janus-face of foreign policy, conveys the idea that leaders must address both domestic and foreign audiences when guiding their respective ships of state. As the constraints of bipolarity wane, regional actors may test international or regional commitments to maintain the status quo.
6. The US has more types of behavior to deter, including identity-related violence.
7. Public no longer as malleable to ideology-based foreign policy initiatives.
8. Soft power is becoming more important and military force is more difficult to wield.
9. US increasingly the linchpin in operations but less often "in charge" of operations.
10. Threat weapons are becoming more technologically advanced.
11. The Cold War demonstrated that terror works as a weapon.
12. For some leader there is an increasing degree of "honor" that can be gained by military victory.
13. The US has withdrawn its presence

The US has withdrawn its presence in both scope and depth. The military flag visits fewer ports and the US strategy for reinforcing NATO depends more and more upon deploying from CONUS. The US economic presence overseas remains strong but struggles against stiffer competition. In the realm of

military capability, withdrawal does not mean retreat or a decrease in readiness to respond swiftly when national interests are threatened. However, it is much harder to demonstrate commitment without having something akin to the "tripwire" that existed in Germany during the Cold War. The socio-cultural outlook of America has also changed in the sense that US military engagement overseas demands more time and political resources before becoming legitimized in political and public realms. These factors may combine to make US intentions and resolve appear less credible when making deterrence threats.

14. WMD proliferation

Stopping the proliferation of weapons of mass destruction is at the top of any short list of national security problems after the Cold War. Threatening to punish proliferants and those that aid them is a promise to inflict pain -- either economic, political, or military. A critical period exists between discovering a program to produce a WMD and operationalizing it, or perhaps even constructing a facility that cannot be bombed without fear of harming large numbers of citizens downwind from the plant. Deterring proliferation is extremely difficult and compelling a state on the verge of becoming a WMD-capable state may be even more difficult. Because of the difficulty in carrying out successful interdiction missions, the special operations community has been charged with a large portion of the operational challenge of countering proliferation. This is an area of military force that does not receive visibility -- it is therefore harder to demonstrate resolve and communicate intentions.

What must US deterrence do today?

While this list is not by any means complete, the following are some of the areas in which the US attempts deterrent threats:

1. Stopping or rolling back proliferation
2. Prevent the use of WMD by rogue states
3. Prevent the use of WMD by terrorists
4. Deter would-be regional hegemon
5. Protect US interests overseas with dwindling resources
6. Prevent regional powers from using their WMD while the US or a coalition is winning a regional war
7. Communicate its intentions, capability, commitment, objectives, etc.
8. Prevent asymmetric war initiation by weaker powers

VI. What Concepts Does Schelling Offer?

Introduction

The conclusion offers a number of Schelling's ideas in the form of updated, brief, and focused conceptual sections. (Numbers following quotes are the page numbers cited from Arms and Influence.) A more detailed study and analysis of the conceptual and theoretical "fit" of existing deterrence strategy in the evolving operational environment should be undertaken.

1. Diplomacy vs. Force: A Misleading Dichotomy?

Schelling observed that "[t]he usual distinction between diplomacy and force is not merely in the instruments, words, or bullets, but in the relation between adversaries -- in the interplay of motives and the role of communication, understandings, compromise, and restraint" (p. 1). The essential point Schelling is making speaks to the very core of deterrence theory. Because there is no way to separate force from diplomacy, it is foolhardy to attempt to deny force its historical role in international relations. While it is true that a Kantian perpetual peace might be an image we should strive toward, we should remember that Kant's peace came only at the expense of conflict and turmoil. Deterrence is the art of threatening pain in order to prevent it. It is a promise that hurting power will be brought to bear if certain behavior is pursued. For many, the idea of threats to use force are problematic, either because of its coercive nature or because "proud military establishments do not like to think of themselves as extortionists" (p. 12). When Schelling

observed that "[m]ilitary action was seen as an *alternative* to bargaining, not a *process* of bargaining" (p. 16) he was illuminating a problem that today's US military faces. One of the tasks facing the US military in an era when arms control and disarmament are sometimes perceived to be more important than operational capabilities is to invigorate a more lively discussion of the critical role force continues to play in international politics. Operations research models should take up this challenge and try to incorporate Cold War modeling methods into analyses of the "new world order." Crisis decision making and the deterrence of aggression are two areas where large bodies of work were produced and, with a little ingenuity, can inform the examination of the role force plays in post-Cold War crisis management and prevention.

2. *High Value Targets and High Payoff Targets: The Calculation of Value in Deterrence*

Related to the need to remain cognizant of the reciprocal relationship between force and diplomacy is the need to remember the role of "value" in deterrence relations. In the military we seek to destroy enemy high value targets and high payoff targets. High-value targets are those assets that the enemy commander requires for the successful completion of his mission. High pay-off targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. In deterrence operations high-value and high-payoff targets are just as important. The key is finding what is valued and what can be held "hostage" to make deterrence work. As Schelling argued, "[i]n addition to taking and protecting things of value [force] can *destroy* value. In addition to weakening an enemy militarily it can cause an enemy pain and suffering" (p.2). Value and the ability to destroy value is related to rewards and avoiding punishments. Making a credible threat to inflict pain by hurting someone or destroying something they value is a process found at the core of most diplomatic arguments. Deterrence involves making sure that the power to hurt is communicated in such a way that the enemy realizes that some behavior will bring pain while a different tract will bring none or even a reward. Deterrence worked during the Cold War, perhaps, because in the early years of the missile era it was realized that "[w]ar no longer looks like just a contest of strength. War and the brink of war are more a contest of nerve and risk-taking, of pain and endurance" (p. 33). War is still a contest of pain and endurance and deterrence remains a process of making a leader aware of the power to hurt. "To exploit a capacity for hurting and inflicting damage," Schelling argued, "one needs to know what an adversary treasures and what scares him" (p. 3). This involves a broader knowledge of cultures and decision processes as well as determining those aspects of value that can be threatened to deter aggression.

3. *Pain, Power, and Projection: Accepting the Power to Hurt as Bargaining Power*

One of the aspects implied in the above discussion is the idea of the power to hurt as bargaining power. The US continues to use power projection operations to signal US commitment overseas, including participation in UN operations, peace keeping missions, and evacuating US citizens. One of the reasons is to demonstrate resolve in protecting such US interests as freedom of navigation and lines of communication and logistics. Implicit within these operations is a message that the US has the power to inflict pain far away from its shores. For Schelling, "The power to hurt is bargaining power. To exploit it is diplomacy -- vicious diplomacy, but diplomacy" (p. 2). After the Cold War, pain is no longer as visible in political communication and diplomacy. In addition to routine signaling operations the US should find ways to communicate the ability to inflict pain using a wide range of tactics, techniques, and routes of attack. Center of Gravity analysis is often employed to determine political centers of gravity as well as operational centers of gravity. Both involve a form of nodal analysis in which a politico-cultural-economic systems are taken apart to determine vulnerable strike points that, upon being damaged, render the entire system vulnerable.

4. *In Search of Common Ground: The Quest For Mutual Interests and/or Aversions*

The US and NATO have recently moved from threat-based planning to capability-based planning, which may lead to a process of threat evaluation that ignores intangible elements. While Schelling argued that a "purely 'military' or 'undiplomatic' recourse to forcible action is concerned with enemy strength, not enemy interests" he also recognized that "the coercive use of the power to hurt...is the very exploitation of enemy wants and fears... Opposing strengths may cancel each other out, pain and grief do not" (p. 3). At

the same time that the US is moving toward capability-based planning it should also focus efforts on finding common interests and aversions with regional trouble-makers. In the calculation of capabilities and in the decision to use the threat of pain to modulate behavior, the US should find ways to promote those interests that it shares with regional actors as well determine which aversions are useful for deterrence and compellence.

5. *Unpacking the Black Box: The Psychology of Violence*

Deterrence is essentially a psychological relationship. As Schelling discovered, "[i]t is the *threat* of damage, or of more damage to come, that can make someone yield or comply. It is latent *violence* that can influence someone's choice -- violence that can still be withheld or inflicted, or that a victim believes can be withheld or inflicted. The threat of pain tries to structure someone's motives, while brute force tries to overcome his strength" (p. 3). Getting inside an enemy's "black box," or into his mind, is one of the most difficult parts of negotiations. The psychology of Cold War deterrence was predicated on a common understanding of the horrific power of nuclear weapons. Even if the superpowers shared vastly different incentive structures over any single issue, all sides knew the consequences of failing to resolve an issues when the last option was escalation. Both sides developed a healthy respect for the commitments the other communicated, a situation that led Schelling to state that "out commitment is not so much a policy as a prediction" -- states believed that commitments would be honored. (p. 53). A problem with deterrence theory is that it has always rested on a somewhat ambiguous threat. Making this threat work in regional situations requires that the US devote more attention to getting inside the black box. This requires a greater understanding of culture, community and the socio-political aspects of a country.

6. *"Come-Alongs" or Come-Ons? Exploding the RMA*

The US may not be able to make credible threats if the degree of threat required would entail the destruction of an entire country. In these cases, Schelling has an interesting analogy: "one can disable a man by various stunning, fracturing, or killing blows, but to take him to jail one has to exploit the man's own efforts. 'Come-along holds' are those that threaten pain or disablement, giving relief as the victim complies, giving him the option of using his own legs to get to jail" (p. 8). The RMA offers the ability to configure attacks to be successful come-alongs. Work needs to be done to both perfect these measures and to demonstrate them.

7. *Making Come-Alongs Work: Why Perception Counts*

These come-along capabilities must be clearly demonstrated and then combined with credible diplomatic statements. Schelling found that, "on the battlefield...[,] tactics that frighten soldiers so that they run, duck their heads, or lay down their arms and surrender represent coercion based on the power to hurt; to the top command, which is frustrated but not coerced, such tactics are part of the contest in military discipline and strength" (p. 9). This is part of the need to configure come-alongs such that leaders are made to feel pain while citizens are kept relatively isolated. Come-alongs will not work if we practice deterrence as usual. During the Cold War many simply assumed that deterrence would work and that the USSR would not attack because such a move would bring devastating retaliation. Finding the means to replicate the stabilizing effect of deterrence in the current operational environment will require attuning deterrence strategies and deterrence-enhancing operations to the specific cognitive vulnerabilities of regional aggressors. This will involve increasing their confidence that the US will attack when deterrence fails. Recent come-along operations, including activities in Somalia, the former Yugoslavia, Panama, and diplomatic failures in dealing with North Korea and Iraq, may have led some to believe that the US does not have the will or capability to carry through with deterrent threats. There is no proof that this is the case, but in the psycho-social realm of deterrence analysts and policy makers must always be aware that perception counts.

8. *Signaling Intentions to Enable the Shaping of Options*

Schelling argued that it is deceptive not to react as you said you would have in a given situation (p. 56). US intentions, he would argue, are critical and must be carried out. There can be no last-minute changes of heart. Political pressure and political legitimacy are two aspects of national will. In cases in which US interests are clearly threatened, as in the potential use of nuclear blackmail against the US, there will likely be a tremendous outpouring of popular support for military action. The US has had some success in communicating its no-conciliation policy regarding terrorism. In other cases, where deterrence is more subtle because the US national interest at stake is more nuance, it is again critical to reinforce intentions. In an earlier discussion it was mentioned that US and NATO warplanners have switched from threat-based planning to capability-based planning. This does not mean the threats are not analyzed or considered when drafting contingency plans. It does, however, mean that public statements and posturing may not be able to address specific actors and actions. Schelling had this to say about capabilities and intentions: "It is a tradition in military planning to attend to an enemy's capabilities, not his intentions. But deterrence is about intentions -- not just *estimating* enemy intentions but *influencing* them. The hardest part is communicating our own intentions" (p. 35). The essential point Schelling is making is that deterrence strategies are not passive -- they attempt to alter the incentive structure of an adversary in order to adjust the pareto frontier regarding certain actions or decision paths. Schelling is reinforcing the image of military force as bargaining power and at the same time making a statement about intentions: "To project the shadow of one's military force over other countries and territories is an act of diplomacy. To fight abroad is a military act, but to *persuade* enemies or allies that one would fight abroad, under circumstances of great cost and risk, requires more than a military capability. It requires projecting intentions. It requires *having* those intentions, even deliberately acquiring them, and communicating them persuasively to make other countries behave" (p. 36).

9. *Playing Irrationally: When Shaping Involves Limiting Options*

One of the aspects of Schelling deterrence theory that we have not discussed is the role of commitment. Consider the effect of placing troops on the far side of bridge as a first line of defense against enemy troops crossing the bridge to invade. Placing troops on the bridge signals that you are ready to mount a defense. "But," Schelling posits, "if you burn the bridge so that you cannot retreat, and in sheer desperation there is nothing you can do but defend yourself, he has a new calculation to make" (AI p. 43). The idea of burning the bridge parallels the example of parking your car in the middle of the road - you are creating a discrete set of options for the deterred part. By committing to something you are forcing an aggressor to re-think your willingness to absorb pain. For Schelling, "[t]he *commitment* process on which all American overseas deterrence depends -- and on which all confidence within the alliance depends -- is a process of surrendering and destroying options that we might have been expecting to find too attractive in an emergency" (p. 44). Because "deterrence often depends of relinquishing the initiative to the other side" (p. 45), the US must consider of the role of deterrence threats and associated diplomatic mechanisms that provide opportunities to limit an opponents options without forcing leaders into lose-lose situations where they face two-edged swords.

10. *Managing Risk: Use A Behavioral Approach*

Actions, it is often claimed, speak louder than words. In deterrence, especially when trying to limit an adversaries options in order to shape the future, a critical question must be answered, "How do we maneuver into a position so it is the other side that has to make that decision?" To this question Schelling observed that, "Words rarely do it" (p. 47). Managing risk requires a behavioral approach to conflict that perceives risk as a subjective construct in which absolutes are rarely involved. Deterrence is risk management taken to a high level of abstraction because it depends upon a strategic situation in which players do not have complete information. US deterrence after the Cold War has not, to the best of my knowledge, been subjected to a rigorous analysis that accounts for evolving psychological relations as well as military capabilities. Moreover, the US may be moving away from the tangible communication means that go beyond "words" when demonstrating intentions and capability. 2010 may border on risky management because it seems to have bought into the trend to reify technology while forgoing doctrinal and organizational changes. Conventional wisdom has deterrence continuing to work after the Cold War in the same manner that it did two decades ago. While there is no reason to believe that we will be attacked

tomorrow there is also no reason --logically -- to remain convinced that deterrence fashioned in one strategic context can work in another one.

11. Modulating the Signal: Compellence

The previous example of blocking the road was described as lying on the edge of deterrence in the realm of compellence. Schelling found that a "[b]lockade illustrates the typical difference between a threat intended to make an adversary do something and a threat intended to keep him from starting something" (p. 69). As the embodiment of "move power," compellence says to an opponent, "You have to arrange to *have* to collide unless [they] move, and that is a degree more complicated" (p. 70). As was mentioned above, deterrence in most circumstances "involves setting the stage -- by announcement, by rigging the trip-wire, by incurring the obligation -- and waiting." This differs from compellence, which "usually involves *initiating* an action (or an irrevocable commitment to action) that can cease, or become harmless, only if the opponent responds" (p. 71-2). One of the problems with using a compellence strategy is the need to define and communicate the compellence intentions. For Schelling, "Compellence has to be definite: We move, and you must get out of the way...There has to be a deadline...If the action carries no deadline it is only a posture, or a ceremony with no consequences" (p. 72). It is often very difficult for the US to make and keep deadlines that involve the use of force. As a minimum, the US should find "example" cases in foreign affairs where it can demonstrate resolve by using force. To many, this may be an inappropriate strategy. It may, however, be the most prudent. Edward Luttwak and others have posited that the post-Cold War world will demand more compellence on behalf of the US because constraints on the use of force have decreased.

12. Living in the Shadow of the Future: Nobody Forgets Where They Buried the Hatchet

Schelling found that, "in the West we deal mainly in deterrence, not compellence, and deterrent threats tend to convey their assurances implicitly" a situation that sometimes leads us to "forget that *both* sides of the choice, the threatened penalty and the proffered avoidance or reward, need to be credible" (p. 75). There is a "connectedness" (p. 87) between among threats and between the threat to inflict pain and the promise of a reward for right action. As the section on the role of nuclear weapons argued, it is too soon to determine what the future use of nuclear weapons will be. Once their numbers are reduced it will be hard for nations to re-build arsenals. One of the things that people often forget when peace seems to be breaking out is that few people forget where they buried a hatchet. US deterrence and compellence strategies should be adapted to account for resurgent threats as well as the range of new threats that must be met. We are living in the shadow of the future -- our own expectations are forcing us to make certain assumptions about future conflicts. We should remain cognizant, however, of the permanency of grievances and our own history of failing to recognize warning signs.

13. Full-Spectrum Credibility: The Path to Full-Spectrum Dominance?

Issues concerning deterrence are no longer dominated by the East-West relationship. Regional powers and would-be hegemonies necessitate a nested approach to deterrence and compellence that allows for mixed-motive games with many actors and complex incentive structures. Regional deterrence calls for concepts that are not grounded in mutually assured destruction -- what is needed is a more graduated approach to pain, what Alexander George terms "coercive diplomacy." ²⁰¹⁰ calls for full-spectrum dominance. Achieving dominance will require conducting operations and a willingness to absorb short-run pain in order to shape tomorrow's threat landscape. The politico-military leadership of the US needs to consider the price full-spectrum dominance will have, including casualties and prestige issues in international forums where the use of force against regional powers is perceived to be bullying. The Gulf War, we should remember, was a classic case where deterrence failed, making compellence necessary.

VII. Conclusion

Analysis for Complex, Uncertain Times?

How to engender robust analysis for complex, uncertain times, involves more than simply recognizing that times are changing or becoming more complex. The theme running through this paper points to an important first step in the transition of analysis to a post-Cold War threat environment. The first question we should ask about deterrence theory is, How do we know what we know? Using Schelling to invigorate a discussion of post-Cold War deterrence theory returns the analysis of deterrence to its founding principles. Recognizing that the security landscape has changed should lead to a quest to determine how this change relates to the assumptions underlying security planning. Schelling is not the only source of insight into deterrence theory but he remains one of the most readable, original, and applicable sources. Strategic operations that are intended to have a deterrent effect on regional actors have to account for threat perception, perceptions, credibility, and other aspects of deterrence that are intangible. Operations research cannot be expected to be immune from the need to re-examine the epistemological aspects of deterrence theory.

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